We Claim:

1. An article of manufacture comprising a computer usable medium having computer readable program code embodied therein for predicting failure of a disk drive, the computer readable program code comprising:

program code for causing a calibration host to generate a test string including a plurality of performance sensitive reads, each performance sensitive read including one of a first and second read;

program code for causing the calibration host to determine a probability of occurrence of a given ratio of first reads to second reads in the test string and for storing respective probabilities as calibration parameters for the test string;

program code for causing a testing host to periodically apply the test string to a disk drive;

program code for causing the testing host to monitor application of the test string to identify a number of first reads and a number of second reads performed during application of the test string and for establishing a ratio of first reads to second reads;

program code for causing the testing host to compare the ratio of first to second reads to respective calibration parameters and for generating a comparison result; and

program code for causing the testing host to predict a possibility of disk drive failure as a function of the comparison result.

2. The article of manufacture of claim 1 further comprising program code for causing the testing host to measure the positioning times for the performance sensitive reads executed during application of the test string as measured positioning times.

3. The article of manufacture of claim 1 further comprising program code for causing the testing host to compare measured positioning times to stored positioning times and generate a warning signal indicative of disk drive failure responsive to the comparison.

4. The article of manufacture of claim 1 further comprising program code for causing the calibrating host to detect the spindle speed for each performance sensitive read in the test string and store the spindle speeds as calibrated spindle speeds.

5. The article of manufacture of claim 4 further comprising program code for causing the testing host to detect spindle speed for each performance sensitive read executed during application of the test string and store the detected spindle speeds as measured spindle speeds.

6. The article of manufacture of claim 5 further comprising program code for causing the testing host to compare the measured spindle speeds with the calibrated spindle speeds and to generate a warning signal indicative of disk drive failure responsive to the comparison.

7. The article of manufacture of claim 1 wherein the testing host and the calibrating host are the same device.

8. An article of manufacture comprising a computer usable medium having computer readable program code embodied therein for generating a disk drive failure indicator, the computer readable program code comprising:

program code for causing a host to generate access patterns for reads of data that test reliability of specific functions of disk drive components;

program code for causing the host to identify performance sensitive reads in each of the access patterns, each performance sensitive read including one of a first and second read; and

program code for causing the host to generate a test string including a plurality of the first and second reads, the test string, when applied to a disk drive, being an indicator of possible disk drive failure.

9. The article of manufacture of claim 8 wherein each performance sensitive read includes a read operation that, given a plurality of read reptitions, a percentage of

the repitions require N disk revolutions to complete and the balance of the repitions require N $\pm$ 1 disk revolutions to complete.

10. The article of manufacture of claim 8 further comprising program code for detecting the spindle speed for each performance sensitive read in the test string and storing the spindle speed as calibrated spindle speeds.

11. An article of manufacture comprising a computer usable medium having computer readable program code embodied therein for predicting failure of a disk drive, the computer readable program code comprising:

program code for causing a host to periodically apply a test string read to the disk drive, the test string read including a plurality of performance sensitive reads;

program code for causing the host to monitor the application of the test string to identify a ratio of first to second reads from amongst the plurality of performance sensitive reads performed during application of the test string; and

program code for causing the host to compare the ratio of first to second reads to respective calibration parameters for the test string and generating a warning signal indicative of possible disk drive failure responsive to said comparison.

12. The article of manufacture of claim 11 wherein the calibration parameter includes a probability of occurrence of a given ratio of first and second reads.

13. The article of manufacture of claim 11 wherein the first and second performance sensitive reads include respective first and second access patterns.

14. The method of claim 13 wherein said program code for causing the host to compare the ratio of first to second reads further causes the host to compare the first and second performance sensitive reads corresponding to the first access pattern with a first calibration parameter and to compare the first and second performance sensitive reads corresponding to the second access pattern to a second calibration parameter.

15. The method of claim 13 further comprising program code for causing the host to measure positioning times for the first and second reads corresponding to the first access pattern and store the positioning times as first positioning times and to measure positioning times for the first and second reads corresponding to the second access pattern and store the positioning times as second positioning times.

16. The method of claim 15 further comprising program code for causing the host to compare the first and second positioning times to respective first and second calibrated positioning times and to generate a warning signal indicative of probable disk failure responsive to the comparison.

17. A system for predicting failure of a disk drive comprising:

a disk drive including a spindle, a disk operatively associated with the spindle and a disk reading mechanism including a read head; and

a programmed processor, said programmed processor including:

program code for causing a host to periodically apply a test string read to the disk drive, the test string read including a plurality of performance sensitive reads;

program code for causing the host to monitor the application of the test string to identify a ratio of first to second reads from amongst the plurality of performance sensitive reads performed during application of the test string; and

program code for causing the host to compare the ratio of first to second reads to respective calibration parameters for the test string and generating a warning signal indicative of possible disk failure responsive to said comparison.

18. A computer data signal embodied in a carrier wave for generating a disk drive failure indicator, comprising:

a program code segment for causing a host to generate access patterns for reads of data that test reliability of specific functions of the disk drive;

a program code segment for causing the host to identify performance sensitive reads in each of the access patterns, each performance sensitive read including one of a first and second read; and

a program code segment for causing the host to generate a test string including a plurality of the first and second reads, the test string, when applied to a disk drive, being an indicator of possible disk drive failure.

19. A computer data signal embodied in a carrier wave for causing a host to predict disk drive failure, comprising:

a program code segment for causing the host to periodically apply a test string read to the disk drive assembly, the test string read including a plurality of performance sensitive reads;

a program code segment for causing the host to monitor the application of the test string to identify a ratio of first to second reads from amongst the plurality of performance sensitive reads performed during application of the test string; and

a program code segment for causing the host to compare the ratio of first to second reads to respective calibration parameters for the test string and generating a warning signal indicative of possible disk drive failure responsive to said comparison.